

Early-stage Researcher position available within NOAH ITN

NOAH (Network of functional molecular containers with controlled switchable abilities) is an European training network that has received funding from the European Union's Horizon 2020 under the Marie Skłodowska-Curie action (H2020-MSCA-ITN-2017). The general scientific goal of the **NOAH** scientific research program is to develop, characterise and transfer to applications different types of molecular containers. **NOAH** aims to provide to selected Early-Stage Researchers (ESRs) a great variety of scientific attributes, ranging from the experimental organic and inorganic synthesis to computational chemistry. Photo- and electro-chemistry, MS/gas-phase chemistry, X-ray diffraction and optical spectroscopy techniques will be also included in the scientific formation and development of the recruited ESRs. The trainees will also receive education in complementary and transferable skills through local and network-wide dedicated training activities (e.g. dissemination, communication, organization, governance, ethics...). The training program includes the exposure of the ESRs to chemical research carried out in the non-academic sector by means of full recruitment or short stage secondments in one of the four European companies acting as industrial partners.

1 Marie Curie PhD position available at Freie Universität Berlin in the framework of the NOAH project for 27 months (with the possibility to be extended from other funding sources up to 42 months). The research project will be based on the Gas Phase study of encapsulation processes. The ESR will receive additional training by undergoing relevant secondments at the industrial and other academic partners' facilities

Questions regarding the recruitment can be sent to: qaraqay@iciq.es.

Questions regarding the project can be sent to: c.schalley@fu-berlin.de

Website to submit applications and additional details www.noah-itn.eu

Project title: Gas Phase study of encapsulation processes

Location: Freie Universität Berlin, Germany

Supervisor: Prof. Christoph Schalley

Objectives of the individual project:

- 1) Gain expertise in modern mass spectrometric methods and gas-phase chemistry of noncovalent complexes (e.g. ionization and fragmentation methods, ion mobility MS etc.)
- 2) Learn about the types of non-covalent bonding depending on the environment under which they form (e.g. gas phase vs. solution).
- 3) Synthesis of capsules and cages based on calix[4]arene scaffolds as well as self-assembly (Academic Secondment).
- 4) Thermodynamic and kinetic characterization of capsule and complex formation.
- 5) Find out the importance of the industrial sector in research development (Industrial Secondment)

Expected Results:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 765297.



The ESR will end the recruitment with having applied well-known gas-phase methods, but also with having developed new approaches to the gas-phase ion chemistry of non-covalent capsules and self-assembled cages. A thorough characterization of the capsules in solution and in the gas phase and in particular a comparison of both will add profound understanding of their behavior. Based thereon, capsule design and property prediction as well as the methodology for their characterization will advance significantly.

Planned secondment(s):

Academic secondment: From three- to four-month secondment at ICHO PAN facilities (Poland) working on the synthesis and characterization of calix[4]arene-based capsules in solution.

Industrial Secondment: From four- to six-month secondment at Biolitec facilities (Germany).

Eligibility requirements

EU eligibility criteria for candidates: Candidates of any nationality, but in order to be eligible for the positions the following criteria applies to all applicants:

- The applicant shall at the time of recruitment be in the **first four years of his/her research career** and have **not been awarded a doctoral degree**.
- The applicant must not have resided or carried out his/her main activity in **Germany for more than 12 months in the 3 years immediately prior to the recruitment**.

Candidates profile: candidates must hold a **Master's degree in Chemistry** with excellent academic transcripts. We are looking for **highly motivated** students with **good communication skills**. All candidates must **prove full proficiency in spoken and written English** (B2 certificate, TOEFL, or equivalent).

Job conditions

Appointment under full-time employment contract for a period of **27 months**. The regular time for a Ph.D. in chemistry at FU Berlin is 42 month and the contract will be extended from other sources at the end of the 27th month.

Competitive remuneration (Living Allowance = €3110/month (correction factor to be applied per country) + mobility allowance = €600/month + family allowance if applicable = €500/month). Monthly salary and hosting institution costs for the fellow before any deductions.

Additional funding for participation to courses, workshops, conferences, etc.
Enrollment in a **Doctorate program** with the possibility to lead to a PhD dissertation.

Starting date: ESR is expected to start from September 2019 (estimated time).

